WinCARES 5.2

Beta version

User's Guide

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A. Disclaimer

WinCares 5.2 beta is currently available solely through a request process. The program must remain with the individual who made the request or upon whose behalf the request was made. Express written consent of the authors is required for additional distribution. The request process is outlined here:

      www.grc.nasa.gov/WWW/LPB/cares/request.html

Or you may contact:

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      Phone: 216-433-3215.

B. Description

WinCares is a graphical user interface (GUI) for CARES/*Life*. This program allows the user:
- to use the interface codes (to create neutral files)
- to execute the CARES/Pest and CARES/Life codes given appropriate input files
- to view parameter estimates graphically (output from CARES/*Pest* in the form of Weibull and Fatigue plots)

C. Terminology

JobName   CARES projects utilize a JobNaming convention for all files associated with a particular project. CARES project files utilize this JobName as the root name of all associated files. The file extensions dictate the type of each particular file. The JobName must remain in accordance with the following rules:
- must begin with a letter
- must contain 8 or less characters
- may include letters, numbers, underscores or hyphens only

JobPath   The JobPath can not include spaces.

D. Specifications

System Requirements	
Program	32-bit Windows
Operating System	Windows 95, 98, NT
Disk Space	10 Mb
Minimum Memory	16 Mb

E. Installation

1. The user must create the base directory structure for CARES:

   ```
   C:\CARES\
   ```

   NOTE: The program may be placed anywhere on the user's computer including different drives; however, the jobnaming convention for project files restricts the use of spaces within the directory structure. In other words, WinCares may *not* be placed in the `C:\Program Files\` directory; the space will cause an error when the examples are executed.

2. Place the provided zip file(s) within this directory.

3. Unzip the zip file(s) to this directory ensuring that the *create subdirectories* option or the *use folder names* option is specified in your UNZIP utility.

   The program and supporting files should now reside in

   ```
   C:\CARES\BIN\
   ```

   Other subdirectories should also exist:

   ```
   C:\CARES\EXAMPLES\
   C:\CARES\SOURCE\
   ```

F. Uninstalling

The WinCares software confines itself to the base directory structure; therefore, the `C:\CARES\` directory simply needs to be deleted to uninstall the program from the user's computer.

G. Running the Program

1. Double click on `C:\CARES\bin\WinCares.exe`

2. **About dialog** - This dialog will be displayed for a few seconds and then disappear. To view it again use the [*Help | About*] menu.

3. **JobName dialog** - This dialog will precede the Main dialog during first time use of WinCares. Upon subsequent use of WinCares the last valid JobName will initiate each WinCares session.

   Select an existing JobName such as one from the `C:\CARES\EXAMPLES\` subdirectory or select the `C:\CARES\WORK\` directory and enter a new JobName to initiate a project from scratch. This dialog is also activated either through the *JobName* button or the [*File | JobName*] menu.

   Use the *Files of type* drop down box to toggle which types of files are available in the **JobName** dialog. Any CARES project file may be selected through this dialog to initiate the JobName.

4. **Main dialog** - This dialog provides access to the various program modules of CARES. The availability of the various buttons in this dialog depends on the status of the active project. For example, once the Life module has been successfully executed the Life output file button will become available. Each subsequent execution of the PEST or LIFE modules will overwrite all files that are a product of that module.

5. **Graphics dialog** - This dialog (via the Graphics button on the Main dialog) provides the user with the option of graphing the parameter estimation results from CARES/*Pest*. Use [*File | Chart Open*] or the *Chart Open* button to choose a particular chart to open.

   The user may customize chart colors, line types and other features for subsequent printing or saving as graphic images.

   The parameter estimation results are also summarized for each chart on the *Parameters* tab. This screen may be printed or the text may be copied (highlight with the mouse and [Ctrl + C] to copy to the clipboard).

The following section *Detailed Component List* provides additional detailed information on running WinCares.

H. Detailed Component List

About Dialog - This dialog displays the product version number along with providing hyperlink access to the WinCares website, the Life Prediction Branch website and the NASA Glenn Research Center website.

Main Dialog - This dialog provides access to the various program modules of CARES.

<u>F</u>ile Menu
- J<u>o</u>bName - initiates the JobName dialog for changing JobNames.
- <u>R</u>efresh Files - In case the user has moved or renamed files outside of WinCares this function provides the user with a means to update the buttons and menus on the Main dialog.
- Reset Ne<u>u</u>tral Files - Use this function to restore the Neutral file(s) to the JobName convention.
- <u>V</u>iew Log File - View the CARES execution log file.
- Clear <u>L</u>og File - Deletes the CARES execution log file.
- JobNames - The last 5 valid JobNames are listed for faster retrieval.
- E<u>x</u>it - Exits WinCares.

<u>C</u>ARES Menu - The availability of these options depends on the project file status.
- <u>I</u>nterface - Initiates the Interface dialog.
- <u>P</u>EST - Executes the CARES parameter estimation module.
- <u>L</u>IFE - Executes the CARES reliability module.
- <u>G</u>raphics - Initiates the Graphics dialog.

<u>O</u>ptions Menu
- Text <u>E</u>ditor - The user may customize the editor used for viewing and editing the input, output and log files. The default editor is Notepad.

<u>H</u>elp Menu
- <u>A</u>bout - Initiates the About dialog.

Input and Output File Buttons - The Text Editor set via the Options menu is utilized to display these files. Indicators as to whether the files exist and/or are available will appear next to the actual filename.

Neutral File Button(s) - The Neutral file buttons provide access to modify which particular Neutral file will be used for an analysis. This option supercedes the JobName convention.

Status Bar - The status bar provides helpful hints regarding the function of each button or component the mouse points to.

Interface Dialog - This dialog allows the user to convert ANSYS, ABAQUS or NASTRAN results files to CARES Neutral files. The conversion utility begins in the active JobName directory; however, this utility is not limited to the current JobName.

The left side of the screen is the Input File side. The right side of the screen is the Output File side.

Once the user selects an Input File to be converted it is displayed in the top left *edit field* the type of Neutral File that it will be converted to and its location are displayed in the top right *edit field*. Clicking the *Convert button* performs the conversion.

The top *drop downs* determine which types of files are visible. Additionally, the Output File *drop down* determines which type of Neutral File will be created.

The *Sync Directories checkbox* keeps both Input and Output current directories the same as the user modifies one or the other.

Graphics Dialog - This dialog displays Weibull and Fatigue plots given the PEST input data and the parameter estimation results.

File Menu
- JobName - initiates the JobName dialog for changing JobNames.
- Chart Open - initiates the Chart Open dialog.
- Chart Close - Closes the active chart.
- Chart Open All - Opens all available charts for the current JobName.
- Chart Close All - Closes all open charts.
- Print - Prints the active chart or parameters table (whichever is active).
- JobNames - The last 5 valid JobNames are listed for faster retrieval.
- Exit - Exits the Graphics dialog and returns to the Main WinCares dialog.

CARES Menu
- Pest and Life - Returns to the Main WinCares dialog.

Chart Menu
- Properties - Initiates the Chart Properties dialog related to the active chart.
- Export
  - Bitmap - Initiates the Save As Bitmap dialog for the active chart.
  - Metafile - Initiates the Save As Metafile dialog for the active chart.
  - JPEG - Initiates the Save As JPEG dialog for the active chart.

NOTE: When exporting charts the final image size is the size of the chart window. Resize the chart window to the desired size before exporting to a particular graphics format.

Window Menu - Provides common Windows Multiple Document Interface (MDI) functions for sizing and placement of multiple charts.

Buttons
- CARES - Returns to the Main WinCares dialog.

- JobName - initiates the JobName dialog for changing JobNames.
- Chart Open - initiates the Chart Open dialog.
- Chart Properties - Initiates the Chart Properties dialog related to the active chart.
- Print - Prints the active chart or parameters table (whichever is active).
- Zoom In - Zooms In the View of the active chart.
- Zoom Out - Zooms Out the View of the active chart.
- Reset Zoom - Resets the View of the active chart.
- Pan Arrows - Allows the User to pan the view of the active chart left, right, up or down.

Chart Tab and **Parameters Tab** - Use these tabs to toggle back and forth between the graphics view and the parameter estimates for the active chart. The active tab will dictate the menu options available and what would be printed when the print function is utilized.